Prospective Trends in Farm Credit and Fund Availability: Implications for Agricultural Banking

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Farm Credit markets in the United States are excellent testimony to high performance over the long term in providing credit and related services to the farm sector, and to timely innovation of new financial institutions, instruments, and practices for meeting farmers' capital and credit needs. These markets evolved from strong reliance a century ago on country or frontier banks, local merchants, land mortgage companies, and life insurance companies, to now include the Cooperative Farm Credit System, U.S. government lending agencies and credit programs, local-regional-national credit programs of many farm input suppliers, and a dual banking system with monetary control by the Federal Reserve System.

The result is a diverse set of credit sources for farmers that differ in their sources of funds, degree of specialization in farm lending, legal and regulatory environment, and degree of government affiliation. Considerable financing by individuals, especially sellers of farm land, occurs as well.

Major evolutionary features of the farm credit market are the relatively large size and the regional or national orientation of many of the intermediaries involved. The Farm Credit System has characteristics of a national branch banking organization of very large size. Life insurance companies have regional or national orientations in farm lending. So do credit programs of merchants and dealers. Even local offices of the Federal government are branches of a large national organization. Money center banks, regional banks, many branch banks, and Federal Reserve Banks also are large in size, and in many cases are considered part of the national financial markets.

The consequences of large size and regional or national orientations are largely favorable for financing agriculture. These organiza-

tions have the capacity to specialize and experience size economies in intermediation, to respond effectively to business and financial risks, and to develop ways to procure loan funds from national financial markets. Hence, loan funds originating from nonlocal sources can be made available to farmers in a timely fashion, for various purposes, and in amounts, costs, and maturities that compare favorably with other sectors of the economy. Moreover, the credit programs of government agencies can be tailored to meet specific liquidity or income maintenance needs of farmers, often on concessionary terms. All these features have strengthened the linkages between farm and nonfarm sectors, and increased the sensitivity of the farm sector to changing conditions in national financial markets.

In contrast to these size and scope phenomena, those commercial banks most heavily involved in farm lending continue to be smaller community-oriented banks located in rural areas. Their reliance on local markets for sources of deposit funds and lending activities, both of which are strongly influenced by farm and farm-related financial conditions, has caused periodic stresses in rural banks' liquidity and relatively high fluctuation in the availability of loan funds for fanners. Each period of tight credit, high interest rates, and financial crisis in the last two decades — 1960, 1966, 1969-70, 1973-74, and 1979-80 — has brought increased concern about these banks' competitive position in farm lending and resulting instability in rural financial markets.

This paper's objective is to set the stage for evaluating commercial bank financing of U.S. agriculture in the 1980s with emphasis on the prospects of future sources of funds for agricultural banks. The current setting is reviewed in terms of farm credit demands, the roles of major farm credit suppliers, and the factors that make the 1980s a crucial time in shaping farm credit markets of the future. Several projections of future capital and credit needs for the farm sector are presented and evaluated in terms of the role of the major credit suppliers. Consideration is given to the implications for agricultural banking of changes in the regulatory environment of financial institutions brought about by the Depository Institutions Deregulation and Monetary Control Act of 1980. These regulatory reforms, along with other possible changes in the regulation of banking, should strongly influence costs and availability of loan funds for agricultural banks and their competitive position in rural financial markets.

Farm Sector Debt and Financial Structure

As published data and past analyses show, the use of debt in the farm sector grew substantially since 1950 to levels that far exceed earlier projections [Brake; Melichar; Melichar and Doll]. Several factors have combined to cause this growth, each differing in its timing and degree of importance. Included are a) consolidation of farm units into larger sizes and fewer numbers; b) withdrawal of equity capital by retiring farmers, c) continued mechanization and modernization of farming operations, d) greater emphasis on marketing policies and inventory management, e) higher costs of operating inputs and capital items, f) reduced savings rates from net cash flows by farm families [Melichar], and g) public loan programs responding to various kinds of farm risks.

At the farm sector level, the annual compound rate of growth for total farm debt increased from an average of 7.1 per cent in the 1950s to 7.9 per cent in the 1960s and to 11.7 per cent in the 1970s (Table 1). Since 1975, the annual growth rate for total farm debt averaged 14.4 per cent with non-real estate farm debt growing at more than a 16 per cent rate and farm real estate debt growing at a 12 per cent rate. The higher growth rate for non-real estate debt reversed a pattern of more rapid growth of real estate debt in the 1950s and 1960s.

These accelerating growth rates for'debt make the farm sector the fastest growing component among domestic sectors that use U.S. credit market debt [Board of Governors]. Table 2 shows market shares and growth rates of credit market debt for the farm sector and

TABLE 1
Growth Rates for Farm Debt and Inflation, 1950-1980
Annual Compound Percentage

	1950-1960	*1960-1970*	*1970-1980*	*1975-1980*
Total Farm Debt	7.1	7.9	11.7	14.4
Farm Real Estate Debt	8.0	9.2	11.0	12.4
Non-Real Estate Farm Debt	6.3	6.5	12.1	16.0
Consumer Price Index	2.2	2.6	7.4	8.2[1]

TABLE 2
Distribution and Growth Rates of Credit Market Debt Owed by Nonfinancial Sectors, 1950-1978

	Distribution							*Growth Rates*		
Sector	*1950*	*1955*	*1960*	*1965*	*1970*	*1975*	*1978*	*1950-1978*	*1970-1978*	*1975-1978*
				%						
U.S. Government	51.3	40.6	31.5	25.0	20.3	18.8	18.6	3.87	9.60	11.96
State and Federal Government	5.9	8.2	9.6	9.8	10.1	9.4	8.4	9.05	8.29	8.16
Households	17.2	24.2	29.1	32.7	32.4	32.5	34.6	10.42	11.68	14.68
Farm	2.3	2.4	2.7	3.1	3.0	3.5	3.8	9.71	13.32	15.01
Nonfarm, Non-Corporate	3.1	3.3	3.5	4.5	5.2	5.3	4.6	9.30	9.32	7.58
Corporate	16.9	18.4	20.5	21.3	25.4	26.5	25.1	9.24	10.64	10.34
Foreign	3.3	2.9	3.1	3.6	3.6	4.0	4.9	9.21	15.68	20.61
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	7.70	10.8	12.36

Source: Federal Reserve System

five other nonfinancial borrowing sectors. From 1970 to 1978, the farm sector shows the highest growth rate (13.32 per cent) for debt, although its share of total credit market debt is still less than 4 per cent at year-end 1978. Thus, the accelerating growth of farm debt since 1950 has had a much greater impact on the farm sector than on the national credit market.

Evaluating the impact of greater debt use on financial structure of the farm sector depends on the criteria used. Figure 1 shows measures for two concepts of financial leverage at the farm sector level for individual years for 1950-1980. The stock concept of leverage, measured by the debt-to-asset ratio, D/A, shows the relative claims of debt and equity holders on the stock of total farm assets at various points in time. The flow concept of leverage, measured by the ratio of interest paid to current returns to farm assets, i/r, shows the relative claims of debt and equity holders on returns to farm assets experienced at various times.

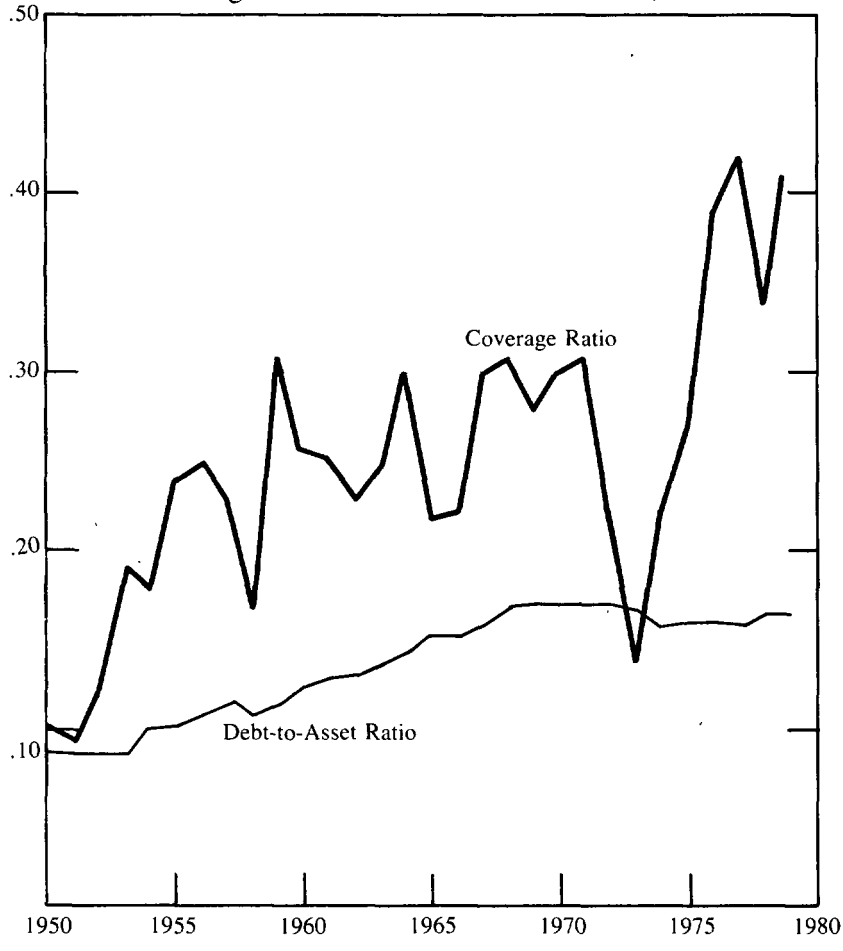
The D/A ratio has an upward trend from 1950 through the mid-1960s, followed by a relatively stable pattern in the last decade and a half. The recent stability of this ratio, together with rapid growth in farm debt, shows the important role of unrealized capital gains on farm assets, especially for farmland, in collateralizing the growth in farm debt and providing most of the sector's growth in equity capital. The ratio gives the appearance of a highly solvent farm industry, but it implies nothing about the liquidity pressures of meeting debt obligations from farm income flows.

The interest-to-asset-return ratio gives insight into the financial risks associated with meeting farm debt obligations from annual income flows. As Chart 1 shows, the i/r ratio is higher than the D/A ratio and has increased sharply in recent years, showing the higher proportion of farmers' current returns to assets that are claimed by lenders. The increase in the i/r ratio is due to the combined effects of greater debt use, higher interest rates, and a higher proportion of returns to farm assets occurring as capital gains. The i/r ratio also is more volatile than the D/A ratio due to year-to-year variability in farmers' current returns and interest rates. This ratio excludes returns from nonfarm income, just as the stock measure excludes portions of farmers' nonfarm investments; hence, additional funds from those sources may be available for debt servicing.

It is well known that use of farm debt is concentrated in larger farming operations. As Table 3 shows, in 1978, U.S. farms with sales

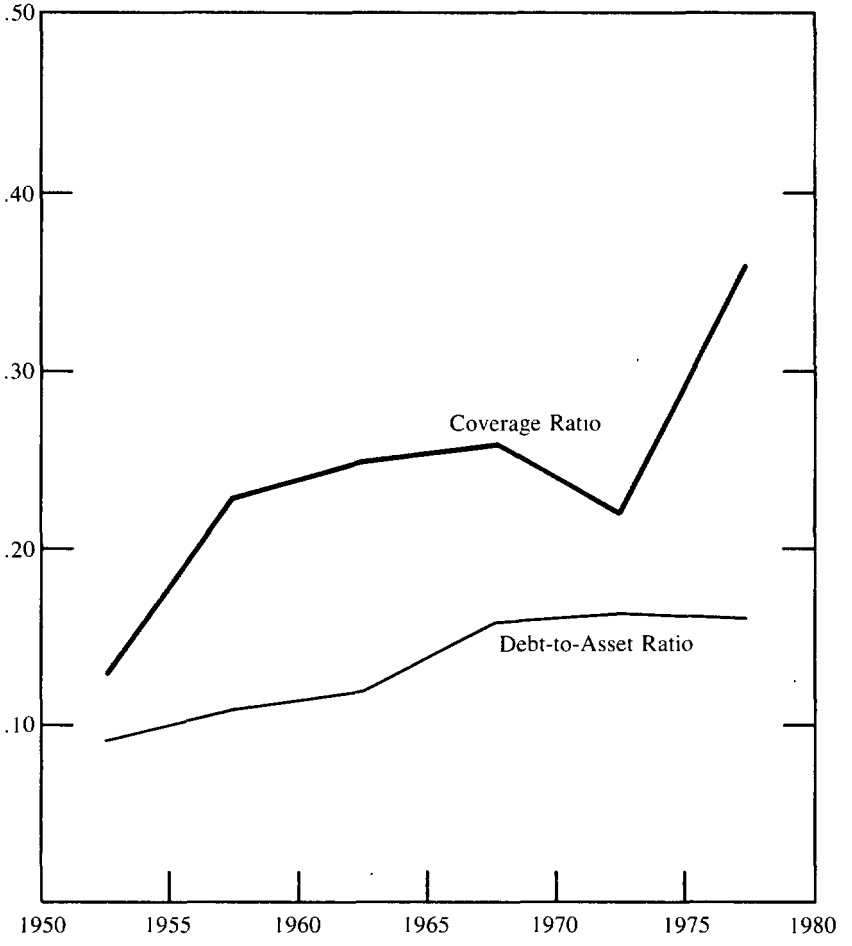
CHART 1

Annual Coverage Ratios and Debt-to-Asset Ratios, 1950-1980



over $100,000 comprised only 7 per cent of the total number of farms (about 185,000 farms) but held 30.5 per cent of farm assets, 41.2 per cent of farm debt, and 28.3 per cent of equity, generated 36.5 per cent of farm income, and earned less than 6 per cent of total nonfarm income in the farm sector. The D/A ratio for these largest farms is estimated as 22.7 per cent for January 1, 1978, compared to a sector average of 16.7 per cent. Other D/A measures come from loan records of farmers who borrow from the Farm Credit System. These data reflect farmers who are actual borrowers, whereas the USDA

CHART 2
Coverage Ratios and Debt-to-Asset Ratios, 5 Year Averages, 1950-1980



data include non-borrowers. **As** examples, Federal Land Bank borrowers in 1978 show an average D/A ratio of .344 for all borrowers, and an average D/A ratio of .422 for young farmers. Similarly, data from the Federal Intermediate Credit Bank of St. Louis for 1979 show an average D/A ratio of .305 for all borrowers, .420 for borrowers under age 35, and .396 for borrowers with loans above $100,000.

These characteristics of debt use, expecially the concentration in larger operations, indicate that. borrowing by farmers has become more aggressive, more sophisticated, more permanent, and more

TABLE **3**

Distribution of Farm Income and Balance Sheet by Farm Sales Class

(Balance Sheet — January 1, 1979; Income — Calendar 1978)

Farm Sales Class	*Number of Farms*	*Assets*	*Liabilitres*	*Equity*	*Farm Income*	*Non-Farm Income*	*Total Income All Sources*
				Percent			
$100,000 and over	7.0	30.5	41.2	28.3	36.5	5.90	19.3
40,000-99,999	14.6	26.0	29.2	25.3	31.5	7.80	18.2
20,000-39,999	12.1	12.9	12.2	13.0	14.2	7.40	10.3
10,000-19,999	11.1	8.0	7.2	8.2	6.5	8.70	7.7
5,000- 9,999	10.5	5.6	3.1	6.1	3.4	11.10	7.8
2,500- 4,999	10.4	14.7	2.5	5.2	2.0	13.10	8.3
Under 2,500	34.3	12.3	4.6	13.9	5.9	46.00	28.4
All **Farms**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.00**	**100.0**
				Amounts'			
	Thousands	**$ Bil**	**$ Bil**	**$ Bil**	$ Mil	$ Mil	$ Mil
All **Farms**	**2,672**	**690.7**	**119.3**	**571.4**	**26.8**	**34.30**	**61.1**

'Ratios: Debt/Asset 0.17
Debt/Farm Income 4.45
Debt/Total Income 1.95

complex in credit evaluations. There are greater concerns about managed leverage, safe debt loads, and integration of effective risk management into overall farm management. There is a prevailing view [e.g., Boehlje and Griffin] that larger farms may benefit from government's more active role as a risk bearer through bidding advantages for land, greater financial capacity for growth, and greater debt servicing capacity. However, these larger, expanding, more highly leveraged operations also become the most vulnerable to risks — and eventually need, or at least seek, public assistance the most. There also is much concern about the effects of inflation on farmers' wealth, income, and liquidity. Recent analyses [Melichar; Tweeten; Boehlje] show that growth in farmers' real income, attributed in part to public policies, makes a higher proportion of farmers' total return occur as capital gains on land relative to current income, with strong liquidity pressures resulting for highly leveraged investors.

Suppliers of Farm Debt

Tables 4 through 7 show the level and market share of total farm debt, non-real estate debt, and real estate debt, respectively, held by the major lending groups: Farm Credit System (FCS), commercial banks, life insurance companies, U.S. government lending agencies, and individuals and others. The first four are considered financial institutions because they either specialize in lending or have specialized loan programs for farmers. Individuals and others include trade firms, sellers of farm real estate, and lending institutions like savings and loan associations or credit unions with minor involvement in farm lending. Each of these groups has experienced different responses to various market forces, institutional developments, and regulatory changes that influence their market shares of farm debt during the 1950-1980 period.

The Farm Credit System's level and share of farm debt experienced steady growth over this time period so that FCS now is regarded as the dominant lender in farm credit markets. Lending by Federal Land Banks, in particular, increased sharply in response to the liberalization of lending authority in the 1971 Farm Credit Act. They now are the most important supplier of farm real estate debt, showing a market share of 36.1 per cent in 1980. Moreover, Farm Credit Administration data on loan purposes indicate that nearly half of the loans made

by FLB's are for refinancing farmers' previous debts, in part as a basis for farm expansion and also to relieve financial stress in times of insufficient cash flows. Production Credit Associations also exhibited steady growth in their share of non-real estate debt until the late 1970s when it declined from a high of 27.1 per cent in 1976 to 24.3 per cent in 1980. While less than the market share and total growth of farm lending by commercial banks, PCA lending has experienced more rapid growth in recent years than bank lending.

Life insurance companies have long supplied considerable long-term debt to farmers. But their market share declined substantially through the late 1960s and most of the 1970s. The decline is attributed to competing uses for life insurance company funds, to increased demand for loans from policy holders, and to usury limits on interest rates in many states that became effective during periods of tight credit and rising market rates.

Data on trade financing from merchants and dealers are less precise than data for institutional lenders; however, the role of trade financing has declined greatly since the late 1960s. Reasons for the decline include increases in trade firms' costs of providing credit services to customers, farmers' preference for borrowing from more specialized lenders, and growth in farm lending by FCS and commercial banks. In contrast, long-term financing supplied by individuals, especially sellers of farmland, has maintained a high, steady market share until declining sharply in the 1979-1980 period.

Farm lending by the U.S. government takes several forms. One consists of nonrecourse price support loans and crop storage loans made by the Commodity Credit Corporation as part of the government's price and income policies for farmers. These loans were high during the 1940s and 1950s. Then they began to decline, as government programs were modified to allow greater movement of commodity prices, and to reflect the use of direct payments as a means of income transfers for farmers. CCC lending now fluctuates with changes in farmers' income. It also increased in the late 1970s in response to implementation of a long-term grain reserve.

The Farmers Home Administration (FmHA) — and, since 1977, the Small Business Administration — have accounted for most of the recent increases in government agency lending to farmers. As Gary Benjamin points out, the share of institutionally held non-real estate debt owed to the FmHA and the SBA increased from 3.5 per cent in 1975 to more than 17 per cent in 1980. This is the largest share for

FmHA since the 1940s. When combined with CCC debt, the three government agencies have nearly 25 per cent of all non-real estate farm debt owed to institutional lenders at the beginning of 1980, up from below 5 per cent in 1975. When debt from individuals and others is added, the government's share of total non-real estate farm debt exceeds 20 per cent.

FmHA's lending to farmers occurs through direct loan programs, guarantees of farm loans made and serviced by commercial lenders, and various emergency loan programs. The recent increase in FmHA lending partially reflects the Economic Emergency Lending Program, which was authorized by the Emergency Agricultural Credit Act of 1978 and extended in 1980. Unanticipated shortages in availability of loan funds at reasonable rates from farmers' current lenders is one of the eligibility requirements for the emergency loan program. Hence, during this recent period, government's role as a liquidity provider to farmers may have supplanted credit normally supplied by commercial lenders, especially agricultural banks. Moreover, the increased role of government lending also has occurred at times in which farm income, although variable, has been high, and appreciation in land values has been substantial [Benjamin].

The extent of commercial bank involvement in farm lending is shown by their share of farm debt relative to other lenders and by the distribution of farm debt among various banks. Over the long term, commercial banks' shares of farm debt have been high, although subject to periodic fluctuation, especially in non-real estate debt. Table 5 shows that banks' share of total farm debt reached a post-war high of 28.2 per cent in 1952, then declined to the 24-26 per cent range through the next decade before rising to another peak of 30.5 per cent in 1974. Their proportion of total farm debt then declined sharply to reach 25.2 per cent in 1980.

Banks' share of farm real estate debt is comparatively minor, amounting to around 12 per cent during the 1960s and 1970s, and then declining to 10.5 per cent in 1980. Their share of non-real estate debt is larger and more volatile. Table 6 shows that banks' share of total non-real estate farm debt experienced a gradually increasing pattern beginning in the mid-1950s and reached above 50 per cent in the mid-1970s. Following 1977, however, banks' market share declined sharply to 41.3 per cent in 1980—a level more comparable to the late 1960s.

TABLE **4A**

Nonreal Estate Farm Debt Outstanding, January 1

	Production Credit Associations		*Other Financing Institutions*		*Commercial Banks*		*Individuals and Others*		*Fartners Home Administration*		*Commodity Credit Corporation*		*Total*
	$ million	%	$ *million*	%	$ *million*	%	$ *million*	%	$ *million*	%	$ *million*	%	$ *million*
1950	387	5.6	51	0.7	2,049	29.8	2,320	33.7	347	5.0	1,721	25.0	6,875
1955	577	6.1	58	0.6	2,934	31.2	3,210	34.1	417	4.4	2,219	23.6	9,415
1960	1,361	10.7	90	0.7	4,819	38.0	4,860	38.3	398	3.1	1,165	9.2	12,693
1965	2,277	12.7	125	0.7	6,990	39.0	6,330	35.3	644	3.6	1,543	8.6	17,909
1970	4,495	18.9	218	0.9	10,330	43.3	5,340	22.4	785	3.3	2,676	11.2	23,844
1975	9,519	26.8	374	1.1	18,238	51.3	6,050	17.0	1,044	2.9	319	0.9	35,544
1980	18,323	24.4	666	0.9	31,034	41.3	11,720	15.6	8,892	11.9	4,500	6.0	75,225

TABLE 4B

Real Estate Farm Debt, Outstanding, January 1

	Federal Land Banks		Life Insurance Companies		Commercial Bank		Farmers Home Administration		Individuals and others		Total
	$ million	%	$ million	%	$ million	%	$ million	%	$ million	%	$ million
1950	965	17.3	1,172	21.0	932	16.7	202	3.6	2,303	41.4	5,579
1955	1,280	15.5	2,052	24.9	1,161	14.1	379	4.6	3,374	40.9	8,245
1960	2,335	19.2	2,820	23.1	1,523	12.5	676	5.5	4,828	39.6	12,182
1965	3,687	19.5	4,288	22.7	2,417	12.8	1,285	6.8	7,218	38.2	18,895
1970	6,671	22.9	5,734	19.6	3,545	12.1	2,280	7.8	10,953	37 5	29,183
1975	13,402	29.0	6,297	16.6	5,966	12.9	3,215	6.9	17,408	37.6	46,288
1980	29,642	36.1	12,165	14.8	8,623	10.5	6,556	8.0	25,137	30.6	82,123

TABLE 5
Total Farm Debt Outstanding, All Lenders, Market Shares, 1950-1980

	Total Debt	*FCS*	*Comm. Banks*	*Life Ins. Co.*	*FmHA*	*Comm. Cr. Corp.*	*Indiv. & Others*
	$1,000	%	%	%	%	%	$
1950	12,454	11.3	23.9	9.4	4.4	13.8	37.2
1951	13,051	11.5	26.9	10.4	4.5	6.2	40.5
1952	14,644	11.4	28.3	10.5	4.1	4.0	41.8
1953	16,099	11.0	26.5	10.7	4.1	7.4	40.3
1954	16,934	10.6	22.8	11.2	4.3	14.1	37.1
1955	17,660	10.8	23.2	11.6	4.5	12.6	37.3
1956	18,792	11.6	24.4	12.1	4.4	10.0	37.6
1957	19,345	12.8	23.7	12.8	4.6	8.1	38.0
1958	20,412	14.0	24.1	12.6	4.8	6.0	38.6
1959	23,649	13.8	23.5	11.3	4.3	10.5	36.7
1960	24,775	15.3	25.6	11.4	4.3	4.7	38.7
1961	26,180	15.7	25.1	11.4	4.4	5.3	38.1
1962	28,466	16.0	24.4	11.1	5.1	6.6	36.9
1963	31,386	15.8	25.0	10.8	5.1	6.5	36.7
1964	34,387	16.0	25.6	11.0	5.1	5.6	36.7
1965	36,804	16.5	25.6	11.7	5.2	4.2	36.8
1966	40,656	17.1	25.3	11.8	5.4	3.5	36.9
1967	44,029	18.4	25.7	11.8	5.5	2.6	36.0
1968	47,397	19.5	26.0	11.7	5.6	3.0	34.2
1969	50.455	20.0	25.9	11.4	5.7	5.3	31.7
1970	53,027	21.5	26.2	10.8	5.8	5.0	30.7
1971	54,483	23.2	27.3	10.3	5.9	3.4	29.8
1972	59,113	24.0	28.3	9.4	5.7	3.8	28.7
1973	65,344	24.3	29.2	8.6	5.5	2.7	29.5
1974	74,136	25.7	30.5	8.0	5.2	1.0	29.5
1975	81,832	28.5	29.6	7.7	5.2	0.4	28.7
1976	90,832	29.5	29.1	7.4	5.7	0.4	27.6
1977	102,663	30.3	29.3	7.2	5.4	1.0	26.9
1978	119,272	29.6	28.1	7.4	6.0	3.8	25.2
1979	137,499	29.2	26.8	7.4	7.2	3.8	25.6
1980	157.323	30.9	25.2		9.9	2 9	23.4

TABLE 6
Nonreal Estate Farm Debt Outstanding, **All** Lenders, Market Shares, 1950-1980

	Total Debt	*PCAs*	*FICB*	*Comm. Bunks*	*FmHA*	*Cornm. Cr. Corp.*	*Indiv. & Others*
	$1,000	%	%	%	%	%	%
1950	6,875	5.6	0.7	29.8	5.0	25.0	33.7
1951	6,938	6.5	0.9	36.4	4.7	11.7	39.8
1952	7,981	7 0	1.0	39.1	3.8	7.4	41.7
1953	8,859	6.8	0.9	36.1	3.8	13.4	39.1
1954	9,194	5.9	0.7	30.1	4.1	26.0	33.3
1955	9,415	6.1	0.6	31.2	4.4	23.6	34.1
1956	9,780	6.6	0.6	33.8	4.2	19.1	35.7
1957	9,523	7.3	0.6	34.4	4.5	16.4	36.6
1958	10,029	8.8	0.7	35.9	4.3	12.1	38.1
1959	12,558	8.9	0.7	33.1	3.2	19.7	34.4
1960	12,693	10.7	0.7	38.0	3.1	9.2	38.3
1961	13,359	11.1	0.7	37.4	3.1	10.4	37.4
1962	14,567	11.3	0.7	36.5	3.4	12.8	35.4
1963	16,219	11.3	0.7	36.9	3.4	12.7	35.0
1964	17,853	12.0	0.7	37.8	3 4	11.0	35.1
1965	17,909	12.7	0.7	39.0	3.6	8.6	35.3
1966	19,470	13.2	0.7	39.4	3.7	7.2	35.7
1967	20,951	14.4	0.7	40.7	3.5	5.5	35.1
1968	22,254	15.8	0.8	41.7	3.6	6.4	31.8
1969	23,058	16.6	0.8	42.2	3.6	11.6	25.3
1970	23,844	18.9	0.9	43.3	3.3	11.2	22.4
1971	24,138	21.9	0.9	46.0	3.3	7.8	20.1
1972	26,906	22.6	0.9	46.5	2.9	8.4	18.8
1973	29,587	22.3	0.8	48.4	2.6	6.1	19.7
1974	32,884	23.8	1.0	52.2	2.7	2.3	18.0
1975	35,544	26.8	1.1	51.3	2.9	0.9	17.0
1976	39,763	27.1	0.9	50.7	4.5	0.9	16.0
1977	46,073	26.6	0.8	50.5	4.1	2.2	15.8
1978	55,631	24.3	0.7	46.2	5.6	8.1	15.1
1979	65,267	23.0	0.8	43.3	8.9	8.0	16.0
1980	75,200	24.3	0.9	41.3	11.9	6.0	15.6

Table 7 excludes loans from individuals and others to show non-real estate farm debt held by institutional lenders. Here, the fluctuations in commercial banks' shares are more pronounced. The 1960s, for example, show a decline in banks' share of institutionally held non-real estate debt in the first half of the decade, followed by an increasing pattern in the second half of the decade until a sharp drop occurred in 1969, perhaps a reflection of the 1969-70 credit crunch. Banks' share rose again to a 1974 high, a period of record-high farm incomes. Banks' share of this debt then declined, with sharp drops occurring in the 1978-1980 period. These fluctuations appear closely correlated with changes in shares held by government agencies. Hence, problems in credit availability at rural banks, in periods of tight money and adverse farm income that hamper loan repayments and deposit growth, are important factors explaining periodic declines in banks' market shares. More liberal lending authority for FmHA (and SBA) through economic emergency programs has further stimulated the recent decline in banks' market shares.

Substantial differences in banks' share of farm debt also occur among states and regions [Barry and Lins]. For non-real estate debt, banks' highest market shares occur in the Northern and Southern Plains regions and in the central Corn Belt; lowest shares occur in the Appalachian and Southeastern regions. For farm real estate debt, highest market shares occur in the Appalachian and Northeastern regions. Lowest shares are in the Mountain and Pacific regions.

Among banks, the distribution of farm debt is strongly influenced by bank size, location, specialization, and type of branching. Money center banks generally finance larger operations, usually those involved in livestock or poultry production [Vasco; Harmon]. This type of financing is not restricted to local markets and may encompass the entire United States. Money center banks in states with liberal branching laws may also serve both large and small farming operations. These banks are further involved in agriculture by financing agribusinesses and international trade, and through loan participations with regional and community banks [Minger].

Regional banks also provide direct loans to large agricultural operations and agribusinesses and loan participations with smaller banks. In fact, when banks are ranked by volume of agricultural loans, most of the top 50 or so banks are in large cities even though their farm lending is small relative to other lending activities. Most heavily involved in farm lending are smaller, community-oriented

TABLE 7
Nonreal Estate Farm Debt Outstanding, Institutional Lenders, Market Shares (1958-1980)

				Government Agencies		
	PCAs	FICB	Comm. Bnnk	Total	FmHA	Com. Cr. Corp.
	%	%	%	%	%	%
1950	8.5	1.1	45.0	45.4	7.6	37.8
1951	10.8	1.5	60.4	27.3	7.9	19.4
1952	12.1	1.7	67.1	19.1	6.5	12.6
1953	11.1	1.5	59.2	28.2	6.3	21.9
1954	8.8	1.0	45.0	45.1	6.1	39.0
1955	9.3	0.9	47.3	42.5	6.7	35.8
1956	10.2	1.0	52.6	36.2	6.5	29.7
1957	11.6	1.0	54.4	33.0	7.1	25.9
1958	14.3	1.1	58.1	26.6	7.0	19.6
1959	13.5	1.0	50.5	34.9	4.9	30.0
1960	17.4	1.1	61.5	20.0	5.1	14.9
1961	17.7	1.1	59.6	21.6	5 0	16.6
1962	17.4	1.1	56.5	25.1	5.3	19.8
1963	17.4	1.0	56.7	24.9	5.3	19.6
1964	18.5	1.1	58.3	22.1	5.2	16.9
1965	19.7	1.1	60.4	18.9	5.6	13.3
1966	20.6	1.1	61.3	17.9	5.7	11.2
1967	22 2	1.2	62.7	13.9	5.4	8.5
1968	23.2	1.2	61.1	14.7	5.3	9.4
1969	22.2	1.0	56.5	20.3	4.8	15.5
1970	24.3	1.2	55.8	18 7	4.2	14.5
1971	27.5	1.1	57.6	13.8	4.1	9.7
1972	27.8	1.1	57.2	13.9	3.5	10.4
1973	27.8	1.1	60.3	10.9	3.3	7.6
1974	29.0	1.2	63.7	6.1	3.3	2.8
1975	32.3	1.3	61.8	4.6	3.5	1.1
1976	32.2	1.0	60.3	6.4	5.3	1.1
1977	31.6	0.9	60 0	7.4	4.8	2.6
1978	28.2	0.8	53.6	16.5*	6.6	9.4
1979	26.6	0.9	50.0	22.5*	10.2	9.3
1980	27.8	1.0	47.1	24.1*	13.6	6.8

*Includes small business administration loans.

banks located in rural areas.

Closely related to bank size is the type of branching. As of January 1, 1979, only 12 states required unit banking operations, 17 states permitted limited branching, and 21 states permitted statewide branching. Most unit banking states are located in the strong commercial agricultural areas of the Midwest and Plains regions. Hence, they experience considerable involvement in farm lending. As Table 8 shows, banks in the 12 unit banking states account for nearly half of all non-real estate loans held by banks and about a third of all farm real estate loans held by banks. Banks in unit and limited branching states together account for about 80 per cent of all non-real estate loans held by banks. Unit banking states also generated about 36 per cent of **U.S.** total gross farm income in 1978 and accounted for about 42 per cent of the total value of all **U.S.** farm assets.

TABLE 8
Farm Debt, Gross Income, and Farm Assets
by Bank Structure, January 1, 1979

	Unit Bunking States	*Limited Branching States*	*Statewide Branching*
Number of States	12	17	21
Nonreal Estate Farm Debt			
$ million	13,907	8,501	5,865
Percent of total, %	49.2	30.1	20.7
Farm Real Estate Debt			
$ million	2,718	4,760	1,078
Percent of total, %	31.8	55.6	12.6
Total Gross Farm Income			
$ million	45,616	46,759	32.539
Percent of total, %	36.5	37.4	20.0
Farm Assets			
$ million	342,059	309,252	168,841
Percent of total, %	41.7	37.7	20.6

Issues in Agricultural Banking

The prominence of unit banking states in farm lending means that much farm lending is concentrated in smaller rural banks at which farm income trends significantly affect loan and deposit conditions. Melichar's analysis [1977] shows that about one-third of all commercial banks have a ratio of total farm loans to total loans that exceeds 0.25. These agricultural banks account for over half of all farm loans at commercial banks. In Illinois, for example, there were 410 agricultural banks in mid-1978 out of a total of 1,251 banks in the state. These banks held about two-thirds of the total farm debt owed to institutional lenders in Illinois and averaged $16.65 million in total assets, with nearly all these agricultural banks having total assets of less than $50 million [Barry and Hakesl.

The liquidity of agricultural banks is of much interest at times, due to their substantial involvement in farm lending and their heavy reliance on local markets for sources of funds. They rely on local markets for attracting deposits as the major source of'loanable funds, and have experienced periodic disintermediation problems as deposit funds subject to legal interest rate limits were allocated to other investments in periods of rising interest rates. These banks also are especially vulnerable to changes in farm and farm-related financial conditions in their local areas that influence loan demand, loan repayment, and deposit activity. Combined effects of these conditions have caused periodic stresses in bank liquidity and relatively high fluctuation in availability of loan funds for farmers.

Federal Reserve data show that average loan-deposit ratios in these agricultural banks generally are less than those of other banks but increased to record levels in the late 1970s. As indicated by Melichar [1980], after remaining relatively insensitive to restrictive monetary policies in the 1969-1970 and 1973-1974 periods, L/D ratios of agricultural banks rose sharply during the low-farm income years of 1976 and 1977 as rapid loan expansion continued while rates of deposit growth and loan repayment declined. Then, as farm income improved, L/D ratios at these banks rose more slowly in 1978 and leveled off in 1979, even as ratios at large nonagricultural banks were rising sharply. L/D ratios for all banks then declined from mid-1979 peaks to lower levels in 1980.

Further evidence about liquidity of agricultural banks is reflected in their responses to surveys about farm lending conditions. Results from surveyed banks in the Seventh Federal Reserve District

(Chicago) show, for example, much disparity between trends in farm loan demand and fund availability in the 1970s. Farm loan demand showed consistent growth. In contrast, the trend in fund availability showed much more variation, including several periods of substantial decline in the late 1970s.

Agricultural banks in unit banking states also experience problems meeting larger farm loan requests that exceed the banks' legal lending limit to individual customers. Benjamin points out that growth in legal lending limits of banks in several Midwestern states has failed to keep pace with growth in farmers' credit needs. A recent survey showed, for example, that more than half the agricultural banks in the Chicago district experienced more farm customers with credit needs exceeding the banks' lending limit than five years ago. These banks must develop loan participations with other lenders for these customers, or risk losing their business.

Bankers also contend that problems in fund availability occur from increasing competition for deposit funds in rural areas. Detailed data about flows of funds in rural financial markets have not been compiled. However, national data on market shares of deposits held by major institutional sources are shown in Table 9. Long-term trends indicate that market shares for savings and loan associations, and to a much lesser extent for credit unions, have been growing. Moreover, in recent years the share held by money market mutual funds grew considerably. Commercial banks' combined share of demand and time deposits declined from nearly 80 per cent in 1950 to less than 60 per cent in 1980. Moreover, the mix of banks' share shifted strongly to time and savings deposits, especially those of larger denomination. While inferences from these aggregate deposit patterns to deposit flows in rural financial markets are limited, the data are consistent with concerns expressed by many agricultural bankers about competition for funds in local markets.

The Setting for the 1980s

The beginning of the 1980s is a crucial period for farm credit markets and for the role of commercial banks in financing U.S. agriculture. Preceding sections have shown the changing patterns of debt use and financial structure in the farm sector, the broad patterns of change in roles of major farm lenders, and the unique characteristics of agricultural banks. However, tracing these patterns of change

TABLE 9

U.S. Deposit Data for Commercial Banks, Thrift Institutions and Money Market Funds

	1950		*1955*		*1960*		*1965*		*1970*		*1975*		*1978*		*1980*	
	$Billion	%	*$Billion*	%	*$Billion*	%	*$Billion*	%	*$Billion*	%	*$Billion*	%	*$Billion*	%	*$Billion*	%
Commercial Banks																
Demand Deposits	93.4	56.6	110.2	49.4	118.4	40.2	139.4	30.4	175.8	27.4	228.	20.4	261.5	17.3	270.9	16.4
Time Deposits	36.8	22.3	50.0	22.4	72.9	24.7	146.6	32.0	233.1	36.3	455.5	40.8	615.6	40.6	660.2	39.9
Large negotiable CD's	0		0		1.1	0.4	16.2	3.5	26.1	4.1	82.9	7.4	100.0	6.6	NA	
Large	NA		NA		4.1	1.4	11.9	2.6	29.1	4.5	75.5	6.8	108.4	7.2	NA	
Small	NA		NA		67.4	22.9	118.0	25.8	176.5	27.5	289.2	25.9	390.3	25.8	NA	
Savings & Loan Associations	14.0	8.5	32.1	14.4	62.1	21.1	110.4	24.1	146.4	22.8	285.7	25.6	431.0	28.5	472.1	28.6
Mutual Savings Banks	20.0	12.2	28.2	12.7	36.3	12.3	52.4	11.5	71.6	11.1	109.9	9.8	142.6	9.4	1458	8.8
Credit Unions	.7	0.4	2.4	1.1	5.0	1.7	9.2	2.0	15.5	2.4	33.0	3.0	53.0	3.5	55.4	3.3
Money Market Funds	.0	0.0	0	0	0	0	0	0	0	0	3.7	0.3	10.8	0.7	49.1	3.0
Total	164.9		222.9		294.7		458.0		642.4		1115.9		1514.5		1653.5	

Source: Federal Reserve Bulletin and Flow of Funds Accounts, Board of Governors of the Federal Reserve System.

Year-end data, except for 1980 (January)

through to the 1980s is not a straightforward process due to the strengthening interrelationships among numerous forces in the farm sector, financial markets, the general economy, and government policies. As later projections will show, combined effects of these forces can strongly influence the rates of growth and composition of future capital and credit needs in the farm sector, as well as the roles of major farm lending groups.

The 1980s are beginning with anticipation of high variability of farm income, especially from uncertainties about export demand for farm products and about the impact of energy and transportation issues on financial performance of the farm sector. Further consolidation of farm units into fewer operations of larger size is anticipated, with an increasing dichotomy between financing needs of larger, more specialized farming operations, and smaller ones that rely heavily on off-farm sources of income. In the national economy, there are uncertainties about how energy, transportation, employment, and efforts to control an unacceptably high rate of inflation will affect financial conditions in the farm sector and economic growth of the U.S. and other countries. In public policy, there are uncertainties about future directions of government price, income, and credit programs for farmers, and whether these programs will maintain a high or low profile in farm credit markets.

In financial markets, the conditions of 1979-80 likely are the most severe of the last two decades, with interest rates reaching record levels and showing much variability. Loan-deposit ratios in agricultural banks increased sharply in the 1970s, as did banks' problems in meeting large loan requests that exceed legal lending limits. The distribution of farm credit among major lenders has been characterized by steady growth in lending by the Farm Credit System, fluctuation of market shares for banks and government lenders in response to changes in farm income and financial market conditions, and declining market shares of other lenders. Competition for savings funds in rural financial markets has increased, and savers appear much more cognizant of yield, liquidity, and risk differentials.

Finally, massive changes are occurring in the regulatory environment for financial institutions that have profound implications for the cost and availability of funds, the profitability, and the competitive position of agricultural banks. As a result, there is much concern about the ability of the commercial banking system to sustain its past pattern of involvement in farm lending—that is, its heavy reliance on

farm lending by smaller unit banks located in rural areas. These factors increase the importance of forward-looking analyses but bring greater complexities into the projection process as well.

Future Farm Credit Demands

The task of projecting capital and credit needs in the farm sector has benefited greatly from previous analytical work in modeling flows of funds. A review article by John R. Brake and E. O. Melichar —two major participants in flow-of-funds modeling—highlights the early developments and subsequent refinements, and demonstrates the sensitivity of projections to important assumptions and estimates of relationships among key variables. The U.S. Department of Agriculture's flow-of-funds project, based on efforts of J. B. Penson, D. A. Lins, and G. D. Irwin, contributed significantly to development of projection methods that have served as the basis of USDA's agricultural finance outlook, as well as providing many insights into important determinants of flows of funds and financial performance in the farm sector.

The projections presented here come from two recent projects by finance economists in the Farm Credit Administration (FCA) and the U.S. Department of Agriculture. Both sets of projections result from substantial efforts in sector modeling, analysis, and judgment by the analysts involved. Their numerical results provide valuable insight into how capital and credit needs of the farm sector during the 1980s may respond to various developments in the national economy, in the farm sector, and in U.S. government policy.

The approach followed here is to briefly review the key assumptions and general lines of analysis for each model and to show some of their numerical results. Neither time nor sufficient information are available to document each model's specification or to critique the analytical procedures. The models differ in choice of variables, functional forms, estimation procedures, length of horizon, time paths of variables and performance measures, and scenario characteristics. Hence, each model's projections are treated independently and show ranges of possible debt levels for the various scenarios. The accompanying tables jointly present each model's baseline projection, and then show projections for each scenario.

FCA's "Project 85" under the direction of John Moore and George Irwin provides a comprehensive assessment of the Farm

Credit System's operating environment at the midpoint of the 1980s. An important part of the project was the projection of farm sector performance and related credit needs using econometric models of Data Resources, Inc. Three scenarios reflect a range of possible sector outcomes for three key variables: a) general inflation rate, b) real rate of national economic growth, and c) rate of growth of agricultural exports.

The baseline scenario is the best estimate of the 1985 environment based on events that can reasonably be expected to occur. The economy is growing at,a 3 per cent annual rate at yearend 1985, the annual inflation rate is 8 per cent, and agricultural exports are growing at 5 per cent annually. A less optimistic scenario, called "high inflation," assumes relatively high inflation (12 per cent annually), slower real economic growth (2 per cent annually), and strong growth of agricultural exports (8 per cent annually). The third scenario, called "low inflation," combines assumptions of low inflation (6 per cent annually) and high national growth (4 per cent- annually) with zero growth of agricultural exports.

These FCA scenarios represent the general pattern of the years from the beginning of the 1980s through yearend 1985. Thus, looking back from the second half of the decade, 1980 could be an average year in the high inflation scenario, a high-inflation year in the baseline, or a breaking year moving toward the low-inflation scenario. Each scenario asks "What if" these general conditions prevail most of the time for the next five years.

FCA projections of the balance sheet and net income for the farm sector are shown in Table 10 for the baseline scenario and in Table 11 for all three. Actual figures for yearend 1979 are included. Changes in balance sheet figures are shown as average annual compound rates of growth over the 1980-85 period.

Total farm debt is projected to grow at a slower rate in the early 1980s than occurred in the second half of the 1970s. For the baseline, the projected annual growth rate for total debt is 9.3 per cent, reaching a total of $275 billion by yearend 1985. The slower growth in debt apparently is attributed to assumptions of lower inflation and lower real farm income for 1985 than occurred in the later 1970s. Lower inflation rates in turn lower the growth rates for costs of operating exports and capital items, especially land values. As in the later 1970s, non-real estate farm debt continues to experience faster growth than real estate debt.

TABLE 10
Financial Projections for Baseline Services, Farm Credit Administration (FCA) and General Equilibrium Model (GEM)

		FCA		GEM			
	1979 Dec. 31	1985 Dec. 31	1980-1985 Average Annual Growth Rate	1985	1990	1980-1985 Average Annual Growth Rate	1980-1990 Average Annual Growth Rare
	$ Billion	$Billion	%	$ Billion	$ Billion	%	%
Farm Sector Assets							
Real Estate	696	1,297	10.9	1,379	2,941	12.1	14.0
Non Real Estate	213	352	8.7	335	484	7.8	7.8
Financial	41	41	0	57	68	5.6	4.7
Total	950	1,690	10.1	1,771	3,493	10.9	12.6
Farm Sector Debt							
Real Estate	85	141	8.8	177	272	13.0	11.2
Non Real Estate	76	134	9.9	164	25	13.7	11.5
Total	161	275	9.3	341	523	13.3	11.3
Farm Sector Net Worth	789	1,415	10.2	1,430	2,970	10.4	12.8
Debt to Asset Ratio	.169	.163		.193	.150		
			Annual Average			Annual Average	Annual Average
Net Farm Income	NA	48.3	42.9	33.9	85.0	28 7	44.9

TABLE 11

Financial Projections for Alternative Scenarios, Farm Credit Administration

		Baseline		*Low Inflation No Export Grmvrh*		*High Inflation Strong Exports*	
	1979 Dec. 31	*1985 Dec. 31*	*Average Annual Growth Rare*	*1985 Dec. 31*	*1980-1985 Averuge Annual Growth Rare*	*1985 Dec. 31*	*1980-1985 Average Annual Growth Rate*
	$ Billion	$ Billion	%	$ Billion	%	$ Billion	%
Farm Sector Assets							
Real Estate	696	1,297	10.9	775	1.8	2,553	24.2
Non Real Estate	213	352	8.7	284	4.9	449	13.2
Financial	41	41	0	51	3.7	23	−9.2
Total	950	1,690	10.1	1,110	2.6	3.025	21.3
Farm Sector Debt							
Real Estate	85	141	8.8	92	1.3	238	18.7
Non Real Estate	76	134	9.9	126	8.8	136	10.2
Total.	161	275	9.3	218	5.2	374	15.1
Farm Sector Net Worth	789	1,415	10.2	892	2.1	2,651	22.4
Debt to Asset Ratio	.169	.163		.196		.124	
			Annual Average				Annual Average
Net Farm Income	NA	48.3	42.9	34.3	31.1	68.3	50.7

The low-inflation scenario with no farm export growth projects total farm debt growing to only $218 billion in 1985 — an annual growth rate of 5.2 per cent. Most of the growth occurs in non-real estate debt; growth rates for both real estate assets and real estate debt decline to very low levels.

The high-inflation scenario with strong farm exports projects total farm debt increasing to $374 billion in 1985—an annual growth rate of 15.1 per cent. Compared to the baseline, most of the additional growth occurs in real estate debt due to combined effects of higher real net farm income, higher inflation, and higher land values. Offsetting the projected growth in real estate debt is even faster growth in real estate values. As a result, the D/A ratio for the farm sector in 1985 declines relative to its 1980 value and relative to its value in other scenarios.

In all three scenarios of the FCA models, non-real estate farm debt is projected to grow at about 9-10 per cent annually between 1980 and 1985 regardless of the values assumed for the general inflation rate, national economic growth, and agricultural export growth. Changes in debt use and farm financial structure for the scenarios occur primarily in the real estate components of the sector's balance sheet. Hence, the FCA model projects fairly steady annual growth of 9-10 per cent in loan demands for non-real estate lenders; these rates are considerably less than the growth rate for non-real estate debt that occurred in the late 1970s.

The second set of projections of capital and credit in the farm sector is based on results of a *General Equilibrium Model* (GEM) which is now used as the projection's mechanism in USDA's financial outlook activities [Hughes and Penson]. GEM includes supply and demand functions for goods in the national economy, using a general equilibrium theoretical structure. It projects values of many macro variables while focusing on financial projections for the farm sector. Hence, the model internalizes estimates on many variables and requires forecasts on a set of exogneous variables that include various government policies. Model results are reported as the balance sheet of the farm sector, farm income statistics, net flows of funds for the farm sector, and various macro-economic variables.

Scenarios reported here for GEM reflect assumptions of high and low rates of general inflation and high and low involvement of government in agriculture. The baseline assumes that monetary and fiscal policies will reduce inflation over the next ten years from

TABLE 12

Financial Projections for Alternative Scenarios, General Equilibrium Model

		Baseline				Low Inflation—Low Government Involvement			
	1979 Dec. 31	1985 Dec. 31	1990	1980-1985 Average Annual Growth Rate	1980-1990 Average Annual Growth Rate	1985	1990	1980-1985 Average Annual Growth Rate	1980-1990 Average Annual Growth Rate
	$ Billion	$ Billion	$ Billion	%	%	$ Billion	$ Billion	%	%
Farm Sector Assets									
Real Estate	696	1,379	2,941	12.1	14.0	1,378	2,938	12.1	14.0
Non Real Estate	213	335	484	7.8	7.8	323	435	7.2	6.7
Financial	41	57	68	5.6	4.7	57	69	5.6	4.8
Total	950	1,771	3,493	10.9	12.6	1,758	3,442	10.8	12.4
Farm Sector Debt									
Real Estate	85	177	272	13.0	11.2	178	281	13.1	11.5
Non Real Estate	76	164	251	13.7	11.5	164	250	13.7	11.4
Total	161	341	523	13.3	11.3	342	351	13.4	11.5
Farm Sector									
Net Worth	789	1,430	2,970	10.4	12.8	1,416	2,911	10.2	12.6
Debt to Asset Ratio	.169	.193	.150			.194	.154		
				Annual Avrg.	Annual Avrg.			Annual Avrg.	Annual Avrg.
Net Farm Income	NA	33.9	85.0	28.7	44.9	30.8	72.2	27.1	39.9

TABLE 12
(continued)

	High Inflation—Low Government Involvement				*High Inflation—High Government Involvement*			
	1985	*1990*	*1980-1985 Average Annual Growth Rate*	*1980-1990 Average Annual Growth Rate*	*1985*	*1990*	*1980-1985 Average Annual Growth Rate*	*1980-1990 Average Annual Growth Rate*
	$ Billion	$ Billion	%	%	$ Billion	$ Billion	%	%
Farm Sector Assets								
Real Estate	1,320	2,607	11.3	12.8	1,316	2,650	11.2	12.9
Non Real Estate	351	634	8.7	10.4	358	681	9.0	11.1
Financial	62	121	7.1	10.3	52	120	4.0	10.3
Total	1,733	3,362	10.5	12.2	1,735	3,451	10.6	12.4
Farm Sector Debt								
Real Estate	196	501	14.9	17.5	194	489	14.7	17.2
Non Real Estate	182	418	15.7	16.8	183	417	15.8	16.7
Total	378	919	15.3	17.2	377	906	15.2	17.0
Farm Sector Net Worth	1,356	2,443	9.4	10.8	1,359	2,545	9.5	11.2
Debt to Asset Ratio	.218	.273			217	262		
			Annual Average	Annual Average			Annual Average	Annual Average
Net Farm Income	22.3	3.2	24.4	21.3	18.2	15.0	23.4	24.4

double-digit rates in 1980 to about 5 per cent in 1990, and that the level of government involvement in agriculture will be similar to 1980 levels in constant dollar terms. A second scenario assumes reduced inflation and lower government involvement in agriculture. A third scenario assumes relatively high inflation throughout the 1980s with low government involvement in agriculture. The fourth scenario assumes high inflation and high government involvement.

GEM projections have a specified horizon (e.g., 10 years) with values of variables and performance measures reported for each year. For summary purposes, GEM results reported here include only yearend values for 1985 and 1990, and annual growth rates for the 1980-85 and 1980-90 periods.

The baseline projects relatively weak financial performance by the farm sector in the early 1980s followed by stronger growth in the second half of the decade. Strengthening occurs from the combined effects of greater stability in livestock earnings, higher incomes of domestic consumers, lower inflation rates, and relatively stable exports. Total farm debt is projected to grow at an 11.3 per cent annual rate over the decade, reaching $523 billion in 1990. Faster growth in debt (13.5 per cent annually) is projected for the first half of the decade, with total debt projected to reach $341 billion in 1985. Debt grows faster than net worth in the early 1980s, while the reverse pattern is occurring by 1990.

Farm real estate values continue to experience rapid growth in the baseline, especially in the second half of the 1980s, as a result of rapid growth in farmers' real income. In contrast, values of non-real estate assets experience relatively low growth (7.8 per cent annually) throughout the decade due to interactions between higher costs of energy and slower growth of investment in farm machinery and motor vehicles. Thus, growth rates projected in the baseline for non-real estate assets are considerably less than those for non-real estate debt.

Results for the scenario with low inflation and low government involvement are similar to the baseline results. However, the two high-inflation scenarios show much greater use of farm debt, as well as relatively low net farm income and slow net worth growth, especially in the second half of the 1980s. Moreover, when inflation rates remain high, the effect of government involvement is more important to farm income in the high involvement scenario, but relatively minor in both cases. In both of the high-inflation scenarios, total farm debt is projected to exceed $900 billion in 1990 with growth of debt ac-

celerating in the second half of the decade. Higher inflation also is associated with declining patterns of real farm income and values of farm real estate. Thus, farm debt experiences faster growth than farm assets, causing slower growth in the sector's net worth.

Table 13 summarizes projections of farm debt under alternative scenarios in both the FCA and the GEM models. The FCA baseline model projects a slower growth rate for non-real estate debt in the 1980-1985 period than does the GEM baseline. However, the GEM's projected growth rate for non-real estate debt declines in the 1985-1990 period. The FCA model also projects a slower growth rate for farm real estate debt than does GEM for the 1980-85 period, although real estate components in the FCA model appear more sensitive to characteristics of the various scenarios than do values of non-real estate components. Differences in the role of agricultural exports in both models have an important influence on the projections. Export growth is an exogenous variable in the FCA model and endogenous in the GEM model.

In evaluating the results of projection models like these, it is common and yet perplexing for both the projection process itself and the specific results to generate numerous new questions that need further study. Indeed, this is a proper role for projection analyses. Model builders must explain and defend their models' specifications and work toward developing a reasonable scenario, or set of scenarios, for analyzing future directions of the sector under study. Results then must be evaluated for that sector and implications considered for many features of the sector that defy effective modeling. Many of these features involve disaggregation of the aggregate results along the lines of various sub-sectors, transactors, structural characteristics, or other classification schemes. Moreover, these disaggregated questions often are highly relevant in policy formulation, private decision-making, measuring performance, and welfare analysis.

Hence, before focusing on suppliers of future farm debt, it is appropriate to consider some possible changes in future characteristics of the farm sector that could alter the pattern of these projections and further influence disaggregative analyses. It is likely, for example, that the farm sector will continue to experience reductions in the number of farms and growth in size of the remaining operations. A recent USDA study projects further decline in farm numbers from about 2.6 million in 1980 to 2.32 million in 1985 and 2.09 million in

TABLE 13
Summary of Farm Debt Projections for Alternative Scenarios, FCA and GEM Models

	Projections					*Historical*			
	1985	*1990*	*1980-1985*	*1980-1990*	*1970*	*1975*	*1980*	*1970-1980*	*1975-1980*
			Average Annual Growth Rates		*Jan. 1*			*Average Annual Growth Rates*	
	$Billion	$Billion	%	%	$Billion	$Billion	$Billion	%	%
Non Real Estate Debt					24	36	76	12.2	16 1
FCA Model									
Baseline	134	NA	9.9	NA					
Low Inflation—No Export Growth	126	NA	8.8	NA					
High Inflation—Strong Exports	136	NA	10 2	NA					
Gem Model									
Baseline	164	251	13.7	11.5					
Low Inflation—Low Gov't Involvement	164	250	13.7	11.4					
High Inflation—Low Gov't Involvement	182	418	15.7	16.8					
High Inflation—High Gov't Involvement	183	417	15 8	16 7					
Real Estate Debt					29	46	85	11.4	13.1
FCA Model									
Baseline	141	NA	8.8	NA					
Low Inflation—No Export Growth	92	NA	1.3	NA					
High Inflation—Strong Exports	238	NA	18 7	NA					
Gem Model									
Baseline	177	272	13.0	11.2					
Low Inflation—Low Gov't. Involvement	178	281	13.1	11.5					
High Inflation—Low Gov't. Involvement	196	501	14 9	17.5					
High Inflation—High Gov't Involvement	194	489	14.7	17.2					

1990. These reductions in farm numbers mean that growth of debt per farm will be higher (by about 2 to 3 percentage points) than the aggregate growth rates, with greater concentration in larger farming operations.

Closely related to the adjustments in numbers and sizes of farms are the financing consequences of farmers' departure from the farm sector and the entry of new operators — either from property sales at retirement or inter-generational transfers of farm property. There may be growing incentive and need for retiring farmers to leave their capital invested in agriculture, in part as a source of financing for new entrants. Moreover, unless transfer taxes are abolished, inter-generational transfers will experience estate and inheritance tax obligations that may often require asset liquidation, borrowing, or both to satisfy liquidity needs of off-farm heirs. Farmland investments may offer a form of tax shelter in inter-generational transfers through qualification for use-valuation on farmland and installment payments of Federal estate tax obligations that are sheltered from market values for land and interest rates. Debt obligations then arise to the Internal Revenue Service, with additional contingent tax liabilities if eligibility conditions terminate.

Projections of future performance are also subject to new developments in financing practices that have no historical basis for modeling. Strong financial performance in the farm sector should increase investment incentives by nonfarm investors, especially in farm land, and open new sources of equity capital. Some lenders may further develop loan programs with equity participations. Growth in farm size and greater complexity in business 'organizations should bring further adjustment to nonproprietary forms of business organization that alter patterns of managerial control and financing. Leasing of real estate should become more extensive, more formal in contractual arrangements, and more complex in financing arrangements for meeting rental payments and for 'sharing financing obligations in share leases. Leasing of non-real estate assets should increase, especially if private leasing companies, financial institutions, and manufacturers can develop leasing programs that are profitable and financially feasible for farm operators. Continued development in risk-bearing skills, especially in inventory management, marketing, and use of various kinds of insurance, will modify debt-carrying capacities and thus financial structure. Involvement of farm families in nonfarm employment and investments seems likely to increase as a

means of diversification and to more fully utilize seasonal labor resources.

Numerous other examples could be identified that arise from the results of aggregate projections and which indicate the need for careful disaggregative analysis. However, the major focus here is on how the growth in farm debt will be met by various participants in farm credit markets.

Future Suppliers of Farm Debt

Neither of the two projection models reviewed in the preceding sector is designed to evaluate the role of major farm lenders in meeting future credit needs of the farm sector. Hence, these issues require further analysis and careful judgment. In particular, there is need to address key questions about the capacity of farm credit markets to meet future financing needs, how the farm debt will be distributed among the major lending groups, and how this distribution is influenced by the various scenarios that characterize conditions in the farm sector, in government policy, in national economic conditions, and in financial markets.

First, there appear to be no strong evidence, concerns, or other indications that farm credit markets cannot continue to meet the aggregate of projected credit needs. Projected growth rates for farm debt are high but also appear lower than comparable rates for the 1970s under most scenarios. The farm sector's share of total credit market debt should continue to be low relative to shares of other sectors. Moreover, as noted earlier, the efficient access of several farm lenders (especially the Farm Credit System and the Federal government) to national financial markets means that credit should be available on a sustained basis over a wide range of possible scenarios. However, the access to national markets rests on the farm sector's willingness and ability to pay current market interest rates on debt which likely will remain relatively high and volatile throughout the 1980s.

The more pressing questions involve the relative positions of farm lending groups in meeting these credit needs, and how these market shares may respond to the various scenarios and to changes in regulations that influence competitive positions in local financial markets.

The distribution of farm debt has been characterized by steady growth in lending by the Farm Credit System, fluctuation of market

share for banks and government lenders in response to changes in farm income and financial market conditions, and declining market share for other credit sources. Market shares in the future should continue to reflect these general patterns, although they will be influenced by the long-term financial performance of the farm and nonfarm sectors and by the impact of regulatory change.

Strengthening of financial performance in the farm sector should enhance farmers' credit worthiness and should thus attract stronger participation of most non-government lenders in farm lending. Market shares of banks, life insurance companies, and trade firms would increase, as would FCS lending, while government lending would decline. In contrast, weak, unstable performance by the farm sector will diminish financing incentives of those lenders that are less specialized in farm lending. This will include life insurance companies, trade firms, and many commercial banks. Heavier financing demands would then occur for FCS and government lending programs.

The level and kind of government involvement in the farm sector also will strongly influence farm credit markets. A high profile of government involvement likely will encourage farmers to use these programs and either attract customers away from commercial lenders or discourage participation of some lenders, especially those less specialized in farm lending. A lower profile of government involvement should prompt greater participation of private sector lenders, especially if long-term farm income conditions appear favorable and if government programs continue to meet serious liquidity needs in times of natural or economic disasters. Further development of complementarities between government and private-sector credit programs should further stabilize farm credit markets. Especially promising are publicly sponsored programs for insurance and guarantees of loans made by commercial lenders. Expanding their roles and enhancing their administrative feasibility could encourage a wider range of farm lending from commercial sources. Evidence so far indicates that FmHA or SBA guarantee programs can reduce lending risks, help with legal lending limit problems, increase loan liquidity, and increase loan profitability.

Choosing a favored scenario for the 1980s is subject to much uncertainty. However, an optimistic approach, combined with the balance of evidence at the beginning of the 1980s, points toward a strong financial outlook for the farm sector over the coming decade

and a relatively low degree of government involvement.

This set of factors should strengthen the incentive for commercial banks to enhance their competitive position in farm credit markets, especially in non-real estate lending. But how commercial banks' financing role in agriculture actually will materialize is also subject to considerable uncertainty about their responses to a new regulatory environment that, once in place, could dramatically alter the structure, performance, and competitive relationships in all levels of financial markets. Hence, it is important to consider the implications of changes in the regulatory environment of financial institutions brought about by the Depository Institutions Deregulation and Monetary Control Act of 1980, by potential changes in the legal structure of banking, and by pending changes in lending authority of the Farm Credit System.

Agricultural Banking and the 1980 Act

Provisions of the Act

The 1980 Act provides for a comprehensive, coordinated revision of the regulatory environment affecting all depository institutions in the United States. Some provisions were effective upon enactment in late March, but most others will be phased in over several years. Thus, the 1980s will witness an adjustment by banks and other depository institutions to a more market-oriented regulatory environment that should increase competition among these major institutions.

The Act contains nine titles that range over monetary control and reserve requirements, deregulation of interest rate controls, extended authorization of automatic transfer services (ATS) and negotiable order of withdrawal (NOW) accounts, increased deposit insurance, expanded powers of thrift institutions, preemption of state usury limits, and other selected issues. A brief summary of significant provisions follows [Barry].

The Act requires all depository institutions to hold reserves on all transaction accounts and on all nonpersonal time deposits. Required reserves are specified as 3 per cent on the first $25 million of transactions balances, with that figure indexed annually on December 31 to rise or fall at 80 per cent of the rate of increase or decrease of the aggregate of transactions balances in all covered depository institu-

tions. Required reserves on larger transaction balances are subject to a rate of 12 per cent. The rate of required reserves on nonpersonal time deposits with maturities of less than four years is 3 per cent, and 0 per cent for those with maturities of four years or more. The Federal Reserve Board can vary the reserve rate on large transaction balances from 8 per cent to 14 per cent, and vary the reserve rate on nonpersonal time deposits from 0 per cent to 9 per cent. The Federal Reserve Board also has the authority to impose a supplemental reserve requirement of not more than 4 per cent of total transactions accounts on every depository institution when needed to more effectively implement monetary policy.

Reserves may be held as vault cash, as balances at a Federal Reserve Bank, or — if a nonmember institution — in the form of passthrough balances in another depository institution that, in turn, maintains such funds as balances in a Federal Reserve Bank. The reserve requirements will be phased in over an 8-year period for depository institutions that were not members of the Federal Reserve System on July 1, 1979, and over a 4-year period for banks that were members of the Federal Reserve System on that date. Full reserve requirements on NOW accounts take effect December 31, 1980, when institutions in the added 42 states (outside New England) are first authorized to issue such accounts.

For interest rate deregulation, the 1980 Act provides for an orderly and complete phaseout by March 31, 1986, of the ceilings on rates of interest and dividends which may be paid on deposits and accounts. The law suggests but does not mandate a phased step-up in present ceilings and requires that thrift institutions retain their one-quarter percentage point differential during the phaseout. Decisions about timing and amount of increases are being made by a new deregulation committee comprised of the Secretary of Treasury, the Comptroller of the Currency, and the chairmen of the Federal Reserve Board, the Federal Deposit Insurance Corporation, the Federal Home Loan Bank Board, and the National Credit Union Administration.

Other significant provisions of the Act include the extension of authority for ATS accounts by banks, for remote service units by Federal savings and loan associations, and for share draft accounts by credit unions; the authorization of NOW accounts for all Federally insured depository institutions effective December 31, 1980; an immediate increase in the insurance limit on deposits and accounts from $40,000 to $100,000; expanded authority for savings and loan asso-

ciations to invest up to 20 per cent of their assets in consumer loans, commercial paper, and corporate debt securities, along with more liberal lending limits on real estate mortgages; and preemption of state usury ceilings. Existing state usury ceilings on business and agricultural loans over $25,000 (subsequently amended to $1,000) were preempted for three years—subject to the right of affected states to override the preemption—and replaced with a floating ceiling of five percentage points above the Federal Reserve's discount rate.

Implications of the 1980 Act

How the regulatory changes in the 1980 Act will affect access to funds, cost of funds, and the competitive position for agricultural banks and other lenders in rural financial markets are complex issues. Interrelationships between macro- and micro-economic forces are involved. So are competitive positions of smaller banks relative to nonbank farm lending sources like the FCS. Also important is how the process of deregulation responds to political pressures during the adjustment period.

Among banks there is concern that adjustment to the new regulatory environment will be greater for smaller agricultural banks. This belief is consistent with their greater problems in fund availability. Regional and money center banks are considered less influenced by Regulation Q because of their access to national financial markets, greater capacity for liability management, and other types of financial innovation.

Changes in reserve requirements arising from the 1980 Act should release additional bank funds to support credit activities, particularly in rural areas. For any given level of reservable liabilities, the Federal Reserve's new requirements are considerably lower than the previous reserve requirements. Preliminary studies show that vault cash will cover the new reserve requirements for most smaller banks, both members and nonmembers. For member banks, this suggests that the sterile (nonearning) balances previously held to meet reserve requirements will be available to support new credit activities. The case is less clear for nonmember banks that now will be subject to reserve requirements imposed by both the Federal Reserve and by their respective states. If their vault cash is sufficient to meet the new Federal Reserve requirements and if state-imposed requirements are adjusted in response to the phasein of the new requirements, then the net effect could be an increase in loanable funds.

Additional concern arises about the effect of universal reserve requirements on correspondent relationships. A nonmember institution may deposit its required reserve balance directly with the Federal Reserve or it may pass its required reserve balance through to the Federal Reserve through a correspondent. Many nonmember banks have simultaneously satisfied state reserve requirements and compensation for correspondent services (including loan participations) by holding demand balances with their correspondent. The correspondent could invest these funds, net of their own reserve requirements. Now the portion of balances meeting the respondent banks' reserve requirements must pass through to the Federal Reserve, making them sterile funds for the correspondent. As discussed above, the strength of this effect on correspondent relationships will depend on the net effect of the new Federal Reserve requirements on the reserve position of nonmember banks.

Elimination of interest rate controls on deposits and preemption of state usury ceilings on loans should contribute to greater efficiency in the flow of funds in rural financial markets and to pricing policies that are more responsive to market factors. Smaller banks will have greater flexibilities in bidding for funds in their local markets, especially those funds that in periods of high interest rates are channeled into money market funds, and directly into money and capital markets. Eventual elimination of the one-quarter per cent differential between thrift institutions and banks will eliminate any disadvantages experienced by banks as a result of this differential. Accompanying those changes will be higher, more volatile interest rates on bank deposits and higher overall costs of bank funds.

How much the cost of funds for agricultural banks will increase is difficult to foresee. Federal Reserve data [Melichar] show that time and savings deposits account for about two-thirds of total deposits at agricultural banks. Moreover, since the high interest rate periods of the late 1970s, increasing reliance has been placed on money market certificates and 30-month certificates of deposit, both having ceiling rates indexed to yields on U.S. government securities. Hence, a relatively high portion of agricultural banks' costs of funds already responds to market factors. Furthermore, the net effect of higher costs of funds should be offset in part by banks' increased revenue from fees, service charges, and higher interest rates on some loans.

Responses of banks' interest rates to loan customers will be strongly influenced by local competitive conditions. Especially im-

portant is the competition between depository and non-depository institutions and the expanded competition in consumer lending by saving and loan associations. Suppose, for example, that banks and other local institutions experience similar increases in the cost of acquiring local funds. They likely can pass these higher costs along to loan customers without much fear of losing customers to one another. However, competition for farm lending between local banks and Production Credit Associations or government agencies may initially tend to constrain increases in farm loan rates charged by banks, if the cost of funds to PCA's or government agencies is not directly affected by the factors raising the cost of funds to banks. Hence, banks' higher costs of loan funds will sharpen the need for competitive pricing of loans and other services. If, for example, lending competition between depository and non-depository institutions on consumer and commercial loans is less than on farm loans, price differentials may arise among loan types in response to these differing degrees of competition. Banks' farm loan rates may remain in line with farm loan rates from non-depository sources, while rates on nonfarm loans would be higher.

Offsetting effects may occur if thrift institutions vigorously exercise their expanded authority in consumer lending and services, leading to greater loan competition with banks. Further offsetting effects will occur if rates in rural financial markets continue to become more responsive to rates in national markets. Then costs of funds for banks and other farm lenders should follow each other more closely, and differences in loan rates would be based largely on differences in risk premiums, efficiency of intermediation, and regulatory factors affecting each lender.

In summary, once the new regulatory environment is in place, it should permit agricultural banks to compete more equitably for funds in local markets, especially during periods of high interest rates and tight credit. Banks will likely experience greater variability in their own costs of funds but reduced cyclical stress during periodic financial crises. While severity of periodic stresses in funds acquisition will be reduced, the need for careful monitoring of rates in both local and national financial markets will increase, as will the need for efficient, responsive pricing policies on sources of bank funds and on loan portfolios. Farmers who borrow from banks will likely experience changing conditions in financial markets more in terms of variability of interest rates than in variability of fund availability, as

occurred in the past. Use of variable or floating rates on loans should increase as lenders seek to pass costs and risks of funds acquisition on to borrowers.

Impact of the 1980 Act on future profitability, portfolio adjustment, and competitive position of rural banks is less clear. A recent ABA study shows, for example, that community banks in general appear to have successfully sustained their profit positions through the stresses of 1979-80. In addition, experience of banks in New England that have dealt with NOW accounts for several years shows successful adjustment to the introduction of interest-bearing transaction accounts. But these past experiences appear different from the case of typical agricultural banks who have heavy community involvement in farm lending and who must compete with large, highly efficient farm lenders like the Farm Credit System and government lenders.

If more equitable access to local deposits comes at substantially higher interest costs, then smaller rural banks will be hard pressed to compete in farm lending on terms that meet their profit expectations, even if profit targets are lowered as a result of more competitive financial markets. Instead, higher proportions of bank funds may be allocated to investment in securities that may tend to maintain short term profit positions, but will erode longer term growth potential. These tendencies could heighten the push toward larger banks and liberalization of branching.

Finally, it does not appear that response to the 1980 Act will have much impact on smaller banks' need for and access to nonlocal sources of funds. Most factors that influence needs for nonlocal funds will continue as before.

These include loan requests that exceed rural banks' legal lending limit, seasonal patterns in loans and deposits, liquidity pressures on loans and deposits from changes in local farm income conditions and farm-related business activity, and periodic needs to reduce risk in loan portfolios and to restructure balance sheet ratios. Hence, the need continues to further refine and develop nonlocal sources of funds for smaller banks.

Other Regulatory Changes

Banking Structure

Prospects appear promising for significant structural change in the

banking industry due to liberalization of geographic restraints on banking activities. A presidential task force has been studying this issue in the last two years and is expected to propose a substantiai easing of restrictions on interstate banking. While any such changes will affect competitive relationships within the banking industry, they appear warranted in light of new competitive market forces that diminish the effectiveness of limits on geographic expansion by banks. Growth of electronic banking services and expansion of major retailers, brokers, and money market funds into bank-like activities have made the system of geographic restraints outmoded and have eroded banks' competitive position relative to other financing institutions.

Current geographic constraints could be eased in two ways. One would be to liberalize the McFadden Act, which prohibits branching across state lines and allows states to set branching policies within their borders. The other would be to change the Douglas amendment to the McFadden Act, which prevents bank holding companies from buying or setting up subsidiaries outside their home state unless authorized by state authorities. Preferences appear to rest with modifying only the Douglas amendment, which would probably bring out-of-state competitors into new markets without having much impact on competition between small banks already in those markets. Liberalizing the McFadden Act would force major changes in local banking structure associated with branching by nearby competitors. If the interstate banking approach is followed, then intra-state changes in bank structure still rest with individual states.

Evidence about the impact of banking structure on agricultural financing is mixed and largely inconclusive. Melichar, in synthesizing and summarizing results of several studies on effects of changes in bank structure on farm lending, found little support for advocating much change in banking structure to solve lending problems in the 1960s — a conclusion similar to that of an Agricultural Bankers Association Task Force. More banks in unit banking states had encountered problems in financing farmers than had banks in branching states; however, rural unit banks also made relatively more use of mechanisms designed to cope with such problems.

In a more recent study, Doll reaches similar conclusions that banks' structure does not appear to have a significant impact on the ability of agricultural banks to finance agriculture, and that changing the banking structure is not likely to solve the major problems

confronting agricultural bankers. Savage also cites evidence that entry into new markets by large banking organizations has not driven small banks out of business. An alternative view is offered by McCall, who cites evidence that potential banking competition is greater in states with more liberal branching, that it influences bank performance, and that unit banks in statewide branching states use a greater proportion of available resources for loans than do similar banks in unit banking states.

In light of this mix of evidence, it may be reasonable to conclude that liberalization of bank structure regulations at the national level could at least offer an additional element of flexibility for tapping nonlocal sources of funds for farm lending. Other changes in bank structure then would rest with individual states.

Lending Regulations and Competition

Another prominent regulatory issue in farm credit markets involves the impact of legal and regulatory restrictions on competitive balance among major lenders, with current emphasis on commercial banks that are heavily involved in farm lending and the Farm Credit System. These issues again have surfaced in legislative hearings and debates on the Farm Credit Act amendments of 1980 now being considered by the U.S. Congress. The bill is intended to update and improve the operation of the Farm Credit System through a set of amendments to the 1971 Farm Credit Act. No attempt is made here to review the detailed provisions of the bill. However, it is appropriate to note that the scope of debate has widened considerably beyond the original content of the proposed amendments to now treat some of the basic differences in the regulatory environment for these two major farm lending groups.

While viewpoints of commercial banks are mixed, the leaders [Finson and Minger; Jackson and Schleusnerl of those banks more heavily involved in farm lending contend that FCS gains competitive advantages in costs and availability of loan funds for agriculture as a result of lower income tax obligations, less stringent regulation and supervision, a nationally federated structure, exemption from usury ceilings and legal reserve requirements, and access to national financial markets on terms that appear comparable to those of the U.S. government. Further concerns are that FCS is expanding the scope of credit and related services to agriculture to levels that may some day resemble a banking institution, that this expanded scope would ex-

ceed the bounds originally intended for FCS, and that revisions in access by other financing institutions to Federal Intermediate Credit Banks as a source of funds do not go far enough in meeting banks' liquidity needs.

In support of its own proposals and in response to these contentions, the Farm Credit System has contended that its prime consideration is whether or not the proposed legislation would further the objective of "improving the income and well-being of American farmers and ranchers" [Wilkinson]. They further contend that an important part of the proposal would enable FCS to work more closely with other lenders, including commercial banks, in meeting the credit needs of rural America. Some additional competition with other lenders would occur, but this would be fair and healthy competition consistent with the interests of the agricultural community and of the nation as a whole.

FCS is concerned that it is inappropriate to evaluate competitive equality among different types of financial institutions using the same set of evaluative criteria, when these institutions are charged with serving different clientele and with providing different financial services. Examples of FCS uniqueness include their specialization as an agricultural lender with strict eligibility requirements on borrowers, an obligation to serve all agricultural areas during all economic times and conditions, a limited range of financial services tailored to the needs of its agricultural clientele, and a non-depository function that also is presumed to exclude transaction accounts services.

However the Farm Credit Act Amendments Bill of 1980 is resolved, it is likely that the legislative process will continue to address issues involving competitive balance among farm lenders in hopes of fostering the most equitable competition possible, while still responding appropriately to changing capital and credit needs in agriculture.

Concluding Comments

A highlight of farm credit markets has been their responsiveness to change — to innovate in farm lending, to keep pace with growing capital and credit needs, and to adapt institutions and programs to changing conditions in agriculture. This evolutionary pattern will continue in the 1980s with new challenges provided for innovation and enterprise.

Results of projection models presented earlier show that financial performance and credit needs in the farm sector are strongly influenced by the combined effects of numerous forces in agriculture, financial markets, the general economy, and government policy. Nonetheless, conditions point toward stronger financial performance of the farm sector for the 1980s and more moderate growth rates for farm debt than occurred in the late 1970s. Government involvement in agriculture then should be lower, focusing on buffering fluctuations of commodity prices and providing farmers with liquidity in times of severe disasters. As a result, stronger credit worthiness for the farm sector should attract vigorous participation by private-sector lenders in financing agriculture.

How the role of commercial banks in financing agriculture will evolve is subject to much uncertainty about their responses to regulatory changes. These changes could significantly alter the structure, performance and competitive relationships in farm credit markets. Preliminary appraisals indicate that the 1980 Act should release additional bank funds to support credit activities in rural markets, enhance efficiency in local flows of funds, allow more equitable competition by banks for deposit funds, and bring more efficient, market-oriented pricing on loans, services, and sources of funds. Farmers who borrow from banks should experience changing conditions more in terms of variability of interest rates than in variability of fund availability, as occurred in the past. If, however, more equitable access to local deposits comes at much higher interest costs, then smaller banks will be hard pressed to profitably compete with other farm lenders.

The 1980 Act will not have much impact on needs by smaller banks for nonlocal sources of funds. Hence, the need continues to improve these banks' access to nonlocal sources. The more promising methods include improved arrangements for loan participations within banking and with other institutions, further development of secondary markets for farm loans that are secured by effective collateral control, government guarantees, or commercial insurance, and more extensive development of Agricultural Credit Corporations (ACC's).

Included in the ACC concept are coordinated efforts by groups of smaller banks on a state, regional, or national basis to gain access to nonlocal funds either through Federal Intermediate Credit Banks or by sale of money market instruments. This idea has been proposed

before, but it appears to warrant renewed consideration now, especially if geographic constraints on banking are liberalized. The group approach would give size-related advantages to agricultural banks in a permanent way that would preserve the features of a unit banking system while helping these banks to cope with the larger size and regional-national orientation of other farm lenders. The recent formation of a multi-bank ACC in Minnesota and considerations of similar ventures in other states are clear steps in this direction.

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